

Sight / Hearing Conservation & Personal Protective Equipment

OPNAVINST 5100.23 (Series)

OPNAVINST 5100.19 (Series)

29 CFR 1910, 29 CFR 1926

This presentation is designed to cover the importance of the sight / hearing conservation programs and the use of personal protective equipment (PPE).

This program will also describe the types and uses of “other” PPE that must be used when the hazard(s) cannot be eliminated.

Knowing when PPE shall be used, what type of PPE to use, how to take care of PPE and it's limitations is crucial.

If there are questions or concerns that are not addressed in this presentation the local Safety Office should be able to assist.



Sight Conservation

- You can not replace an eye. You can not fix decreased vision in an eye. There is no bionic eye. You start with two, that's all you get!
- Wearing eye protection is your best prevention from eye injury



Hearing Conservation

- Noise-induced hearing loss is the Navy's number **ONE** occupational health hazard
- At some point almost everyone in the Navy will be exposed to high intensity noise
- Most noise induced hearing loss occurs between the 5th and 10th year of exposure to hazardous noise levels



PERSONAL
PROTECTIVE
EQUIPMENT SHALL
NOT BE THE FIRST
STEP IN
PROTECTING THE
EMPLOYEE.
IT SHALL BE THE LAST.

Disclaimer

- If you're required to wear PPE this should have been the last step in a process.
 - First is Engineering (replace the equipment or process)
 - Second in administrative (change the process or substitute a material)
 - Third is requiring the use of PPE.
- If you're required to wear/use PPE you need to comply with the requirements. It could save your life.



Personal Protective Equipment

- Navy Policy is to provide and maintain PPE when competent authority determines that its use is necessary...
- Activities shall provide necessary PPE...
- PPE procurement and enforcement of proper use and maintenance is the responsibility of the activity.

OPNAVINST 5100.23 (Series)

Chapter 20

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Chapter B12

Workplace Hazards

- 29 CFR 1910.132 (d)(2) states the employer shall identify workplace hazards.
- Workplace hazards can be verified through written certification, or an Industrial Hygiene Survey*.
- Some examples of Job Hazards:
 - Noise
 - Chemicals
 - Accidental Impact
 - Sharp objects
 - Flying Particles
 - Dust & Mists
 - Bright Light
 - Vibration



*Industrial Hygiene Survey

*The Industrial Hygiene (IH) Survey identifies potential health hazards associated with work processes surveyed, (i.e. respiratory protection, chemical use, noise, etc.) The IH Survey **MAY NOT ALWAYS** determine "other" PPE requirements, especially those associated with potential exposure to physical hazards. For example, an IH survey may address the use of gloves when working with chemicals, but it may not address the use of gloves if working with metal. The IH survey may require the use of eye protection for certain chemical exposures, but not address eye or face protection when working around flying particles or molten metals. The IH survey typically will not address the need for Fall Protection, Foot Protection, and Head Protection.

But the IH survey **DONOT** address the need for the IH

What you Should Know?

Federal Specifications
ANSI Specifications
Underwriters laboratories
ASTM Specifications



What you should know about PPE

- The Limitations of PPE
- How to use PPE
- When to use PPE
- Inspection before use
- Replacement of
- Cleaning & Storage



PPE Limitations

- How does PPE work?
It acts as a barrier between you and a hazard
- PPE **will not** protect you if it is:
 - not designed for the specific hazard
 - damaged
 - not adjusted and worn properly



Using PPE

- For PPE to be effective in protecting you, you must be trained in the proper use of the PPE you are using. Questions to ask:
 - Who provides the training?
 - Where do you get training?
- Once trained in the proper use of the PPE use the PPE in manner you have been trained
- Use the PPE only for the specific hazard(s) it is designed for



Inspecting PPE before using

- Before you use your PPE, inspect it for:
 - Worn or damaged parts
 - Leaks, cracks or deformities
 - Cleanliness
 - Correct size or fit



Replacing PPE

- If any PPE you're using is damaged or worn, get it repaired or replaced immediately (before work is started)
- Do not work without replacing the PPE
- Inform your supervisor when you need new PPE or replacement



Cleaning & Storage

- You're responsible for your PPE
 - Clean the PPE as required
- Do not store it where it will be in contact with:
 - Dust & Dirt
 - Chemicals
 - Sunlight
 - Water



Eye & Face Protection

OPNAVINST 5100.23 (Series)
Chapter 19
OPNAVINST 5100.19 (Series)
Chapter B5
29 CFR 1910.133



Protecting your eyes

- Your eyes are very sensitive organs and may be easily injured.
- Wear eye protection at all times in designated Eye Hazards areas



Some eye hazards are...

- **IMPACT - Chipping, grinding machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, sanding, etc**
- **HEAT - Furnace operations, pouring, casting, hot dipping, welding**
- **LIGHT or RADIATION - Electric arc welding, gas welding, gas cutting**
- **IRRITANTS / CORROSIVES - mists, dusts, sprays, splashes**



Some Types of Eye Protection

- Safety Glasses – for flying chips & low hazards
- Vented Goggles – for dust and non
-hazardous mist
- Non-Vented Goggles – hazardous Chemicals
- Prescription Safety Glasses
- Dark Lenses – intense or UV light



Some Types of Eye Protection



Glasses with side shields



Wrap around safety glasses



Vented goggles



Prescription Safety glasses



Non vented goggles

Face Protection

- A face shield **IS NOT** designed to protect your eyes
- Always use the correct type eye protection with a face shield....
- A face shield should be used when any of the following hazards exist:
 - Chemical splashes
 - Liquid spray
 - Flying chips or sparks
 - High Heat – May require a specific type of face shield



Some types of face shields...



Face shield



Face shield with
hard
hat and hearing
protection



Face shield with hearing
protection

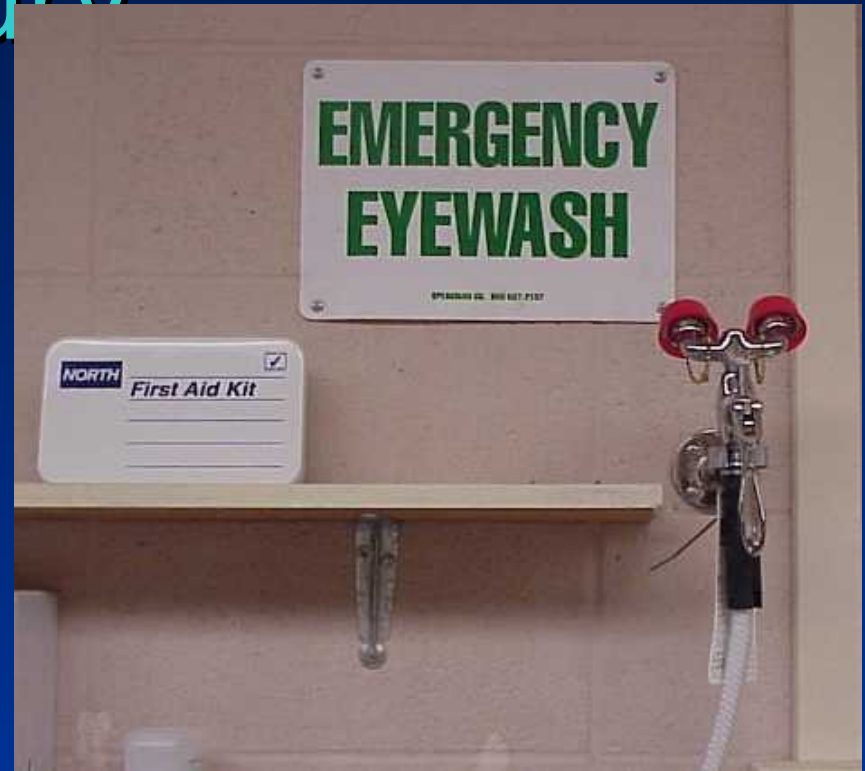
ANSI Z-87.1

- As of July 5, 1994, all safety glasses must meet the minimum standards set forth by the American National Standards Institute.
- Approved lenses are marked by the manufacturer
- Z87.1 will be on all of the major components



What to do in case of an eye injury

- If you get dust, a wood chip or another small particle in your eye, look down and flush it out with eyewash solution. Use water if eyewash solution is not available
- If a pesticide gets into your eyes, immediately use a portable eye flush dispenser or call for help if needed to get to an eyewash station
- Flush your eye with eyewash solution for 15 minutes. Have someone call for medical attention while you are flushing
- The MSDS/SDS and label will give first aid instructions



ANSI/ISEA Z358.1

All emergency eyewash and shower equipment shall meet the standards set forth in the American National Standard Institute/International Safety Equipment Association Z358.1



Head Protection



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Chapter 20
OPNAVINST 5100.19 (Series)
Chapter B12
29 CFR 1910.135
ANSI STD Z89.1

Hardhats...

- Hard hats are needed to protect against
 - Falling objects
 - Accidental impact
- Use a hard hat that is rated for electricity when there is a potential for contact with live circuits



Types of Head Protection

- Type I are designed to protect workers from objects and blows that come from above.
- Type II designed to offer protection from lateral blows and objects
- Classes
 - E (Electrical) can withstand up to 20,000 volts of electricity
 - G (General) able to withstand 2,200 volts of electricity
 - C (Conductive) No protection from electrical shock



Replace your hard hat if...

- The suspension system shows signs of deterioration.
- The suspension system no longer holds the shell 4 inches away from the head.




Replace your hard hat if...

- The brim or shell is cracked, perforated, or deformed.
- The brim or shell shows signs of exposure to heat, chemicals, ultraviolet light, or other radiation.
- Signs include:
 - - Loss of surface gloss,
 - -Chalking, or
 - - Flaking



Can I wear my hard hat backwards?

This is one of the most asked questions.

- **In accordance with ANSI Z89.1 2009 “Reverse donning: Hard hats marked with a "reverse donning arrow" can be worn ntward or backward in accordance with the manufacturer's wearing instructions. They pass all hard hat testing requirements, whether worn frontward or backward.”**



Can I wear anything inside my hard hat?

This is the other most asked question.

- Check with the manufacturer for this information or refer to OSHA letters of interpretation at

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=25336

(To open, right click on “open hyperlink”)



Foot Protection

OPNAVINST 5100.23 (Series)
Chapter 20
29 CFR 1910.136
OPNAVINST 5100.19 (Series)
Chapter B12
ASTM F2412-05



Foot Hazards

- Foot protection is required when heavy objects such as barrels or tools that might roll onto or fall onto your feet.
- Sharp objects such as nails or spikes that might pierce the soles or uppers of ordinary shoes.
- Molten metal that might splash
- Hot, slippery or wet surfaces
- Corrosive Chemicals



Some hazardous conditions...

- **IMPACT - Carrying or handling materials such as packages, objects, parts or heavy tools which could be dropped**
- **COMPRESSION - Work activities involving skid trucks (manual material handling carts, around bulk rolls, around heavy pipes**
- **PUNCTURE - Sharp object hazards such as nails, wire, tacks, screws, large staples, scrap metal, etc**
- **CHEMICAL - Check MSDS / SDS for protection**



Types of Foot Protection

- Conductive (Cd) intended to provide protection for the wearer against hazards that may result from static electricity buildup and to reduce the possibility of ignition of explosives and volatile chemicals
- Electrical Hazard (EH) manufactured with non-conductive shock resistant soles and heels



Types of Foot Protection

- Static dissipative (SD) designed to reduce the accumulation of static electricity
- Puncture resistant (PR) designed with a puncture resistant plate positioned between the insole and outsole
- Chain saw cut resistant (CS) designed to protect the wearer's feet while operating a chain saw.



Types of Foot Protection

- Dielectric insulation (DI) designed to provide additional insulation if accidental contact is made with electrical energized items
- Steel toe protects the toe area against falling objects or heavy rolling objects with a steel protective cap.
- There are others



Inspect your footwear daily...

- For:
 - Cracked, torn or worn uppers
 - Wear, holes, tears, cracks, loss of tread on bottom
 - Separation between soles and uppers



Hand Protection

OPNAVINST 5100.23 (Series)

Chapter 20

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Chapter B12

29 CFR 1910.138

ANSI/ISEA 105-2011



Glove selection

- Not all gloves are created equal....
- Ensure the glove you use will protect your hands from the specific hazards of the job.
- Chemical gloves do not last forever... understand the chemical and “break-through” characteristics of your specific glove



Some Hand Hazards

- Cuts & punctures
- Chemical exposure
- Vibration
- Electric shock
- Burns
- Heat & Cold
- Biohazards



Before you use that glove...

- Is this the proper glove for the task?
- Remove rings & bracelets
- Will that / this glove get caught the machinery I am using?
- Check gloves for wear and damage



Electrical glove checks

- Using electrical gloves?
- Check for holes, tears, punctures, or cuts
- Swelling, softening, hardening, or becoming sticky or inelastic.
- Any other defect that damages the insulating properties
- AIR TEST before each use



Occupational Noise Exposure

*Identified as “Hearing
Conservation and Noise
Abatement “in the OPNAVINST
5100.23 (Series)
OPNAVINST 5100.19 (Series)
Chapter B4
BUMED NOTICE 6260

29 CFR 1910.95



Hearing Protection, Exposure

- The loudness of the noise is measured in decibels (dB)
- The duration (time) the employee is exposed to the noise
- Exposure will be verified through a written certification, or an Industrial Hygiene Survey*



Protecting your hearing...

- Use hearing protection when:
 - in high noise areas
 - using power saws, impact tools, etc.
 - off the job when shooting, using power tools, etc.
- Replace worn or broken hearing protectors immediately



Symptoms of possible hearing loss

- According to the Mayo Clinic signs and symptoms of hearing loss may include
 - Muffling of speech and other sounds
 - Difficulty understanding words with background noise or in a crowd
 - Asking others to speak slowly or louder
 - Turning up the volume on a TV or radio
 - Withdraw from conversations



Types of Hearing Protection



Ear Plugs:

Preformed ear plugs come in different sizes to fit different sizes of ear canals. Formable or foam ear plugs, if placed in the ear correctly, will expand to fill the ear canal and seal against the walls. This allows foam ear plugs to fit ear canals of different sizes.



Ear Caps:

As the name implies, these devices cap off the ear canal at its opening. They generally provide less protection than ear muffs or plugs.

Not recommended for use

Types of Hearing Protection



Circumaural Muffs: These devices fit against the head and enclose the entire external ears. The inside of the muff cup is lined with an acoustic foam which can reduce noise by as much as 15 to 30 decibels. Ear muffs are often used in conjunction with ear plugs to protect the sailor from extremely loud noises, usually at or above 104 decibels.



Hearing protection must

- Be kept clean
- Fit snugly against the head or in the ear
- Have no gaps or breaks



For information and guidance for the selecting of PPE

- The Department of the Navy PPE working group developed some specific information concerning eye, face and hand protection.
- This information can be found at:
[http://www.public.navy.mil/navsafecen/
Pages/osh/SafetyOfficer/Training_Mat
erial.aspx](http://www.public.navy.mil/navsafecen/Pages/osh/SafetyOfficer/Training_Material.aspx) (To open, right click on “open hyperlink”)



PPE,
Use it for your own
protection



Protect yourself...

- Use the right PPE for the Hazard / Job
- Inspect your PPE before using
- Replace damaged or worn PPE
- Store your PPE properly so it will be ready for the next use
- Keep your PPE clean
- Notify your supervisor if you need new PPE



**ANY
QUESTIONS**

